



Flexible Solutions for Air Quality



Ingersoll Rand understands the importance of clean air



Sandblasting ▲ and Construction

Ingersoll Rand offers the compressed air solutions that keep contaminants out of your system — and prevent damage to your end-product as well.



Pharmaceutical ▲ and Food

The highly regulated pharmaceutical industry requires compressed air quality to be built into the manufacturing process. For food and beverage manufacturers, our compressors reduce contamination risk through high-temperature compression.



Oil and Gas, Chemical, and Electronics ▲

High air quality is critical in these industries. Wet and oily compressed air can lead to product spoilage, downtime, and cost liability.

Clean air is essential to the safety and efficiency of countless compressed air applications. Without it such harmful contaminants as oil, dust, dirt, and water can attack your system and lead to downtime, instrument damage, and even product liability.



General Manufacturing ▲

Whether manufacturing cleaning solutions, base stock pharmaceuticals, or anything in between, compressed air must be of the highest purity to minimize risk of production interruption or higher costs.



Instrument Regulations ▲

High-tech air jet looms require super-clean, dry, compressed air, which is why textile manufacturers and other industries have long trusted Ingersoll Rand for quality air.



Snowmaking ▲

When your business depends on a steady supply of quality compressed air, Ingersoll Rand provides the equipment that virtually eliminates oil and other contaminants.

Your best defense against these contaminants is Ingersoll Rand. We offer the clean air systems — compressors, aftercoolers, and dryers — that enable you to precisely meet ISO standards for your industry. Our modular approach lets you and your Ingersoll Rand dealer develop a customized clean-air solution.

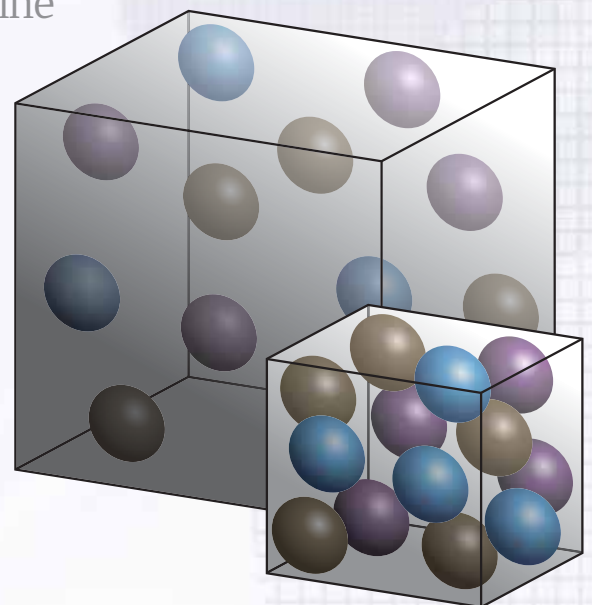
The consequences of contaminated air

Dirt, moisture, and oil are unavoidable in the air around us. When that air goes into a compressor, so do the contaminants — and that's when trouble can start.

ISO 8573-1:2001 Air Quality Classes

Quality Class	SOLIDS			WATER		OIL AND OIL VAPOR
	0.1 – 0.5 micron	Max Number of Particles Per m ³ 0.5 – 1 micron	1 – 5 micron	Pressure Dew Point °F	°C	mg/m ³
0	As specified by the end-user or manufacturer, and more stringent than Class 1					
1	100	1	0	-100	-70	0.01
2	100,000	1,000	10	-40	-40	0.1
3	—	10,000	500	-4	-20	1
4	—	—	1,000	37.4	3	5
5	—	—	20,000	44.6	7	—
6	—	—	—	50	10	—

Look at it this way. The large box shows the typical amount of contaminants in ambient air; the smaller box shows the same contaminants compressed to 125 psig. Imagine that high concentration of contaminants banging through your compressed air system, and it won't be hard to predict the results: premature wear and tear, rust and corrosion in your tools, damaged instruments, spoiled paint surfaces, and more. That's why clean, dry air is crucial to your productivity.



Each contaminant has its own special set of problems

Moisture

- Rust and corrosion in the air system piping
- Inadequate air tool lubrication
- Loss of productivity
- Damage to labeling, packaging, and the finished product

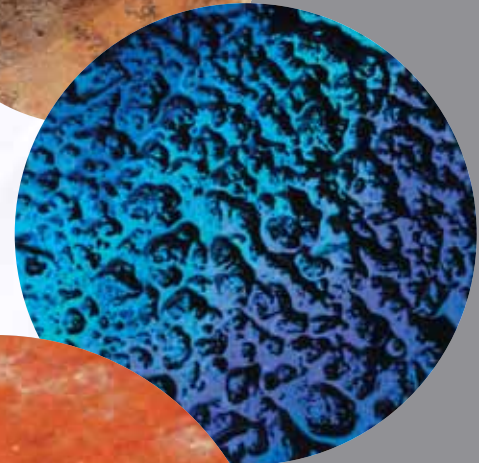
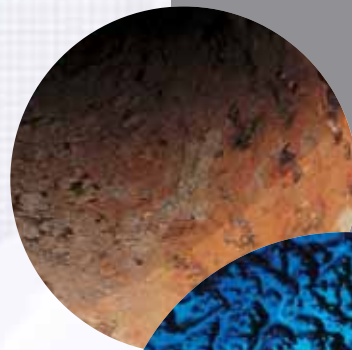
Dirt, dust, and other particulates

- Premature wear
- Scored surfaces
- Clogged orifices
- Ruined finishes and instruments

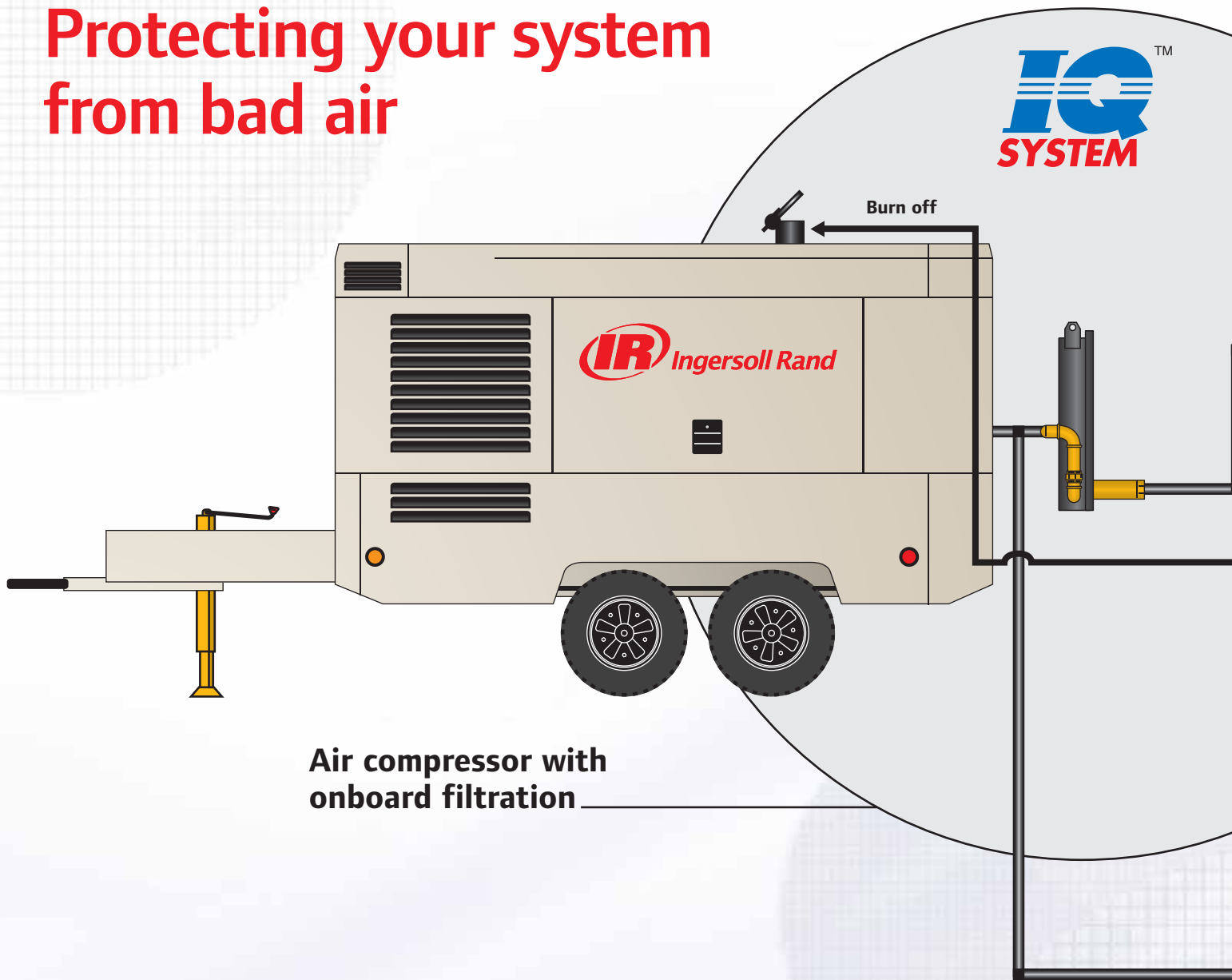
Oil, unburned hydrocarbons, and compressor coolant

- Batch spoilage
- Poor quality of finished product
- Unwanted color / odor in finished product
- Messy, hazardous work environment

**The bottom line:
Dirty air wreaks havoc
on your equipment and
your end-products alike**



Protecting your system from bad air



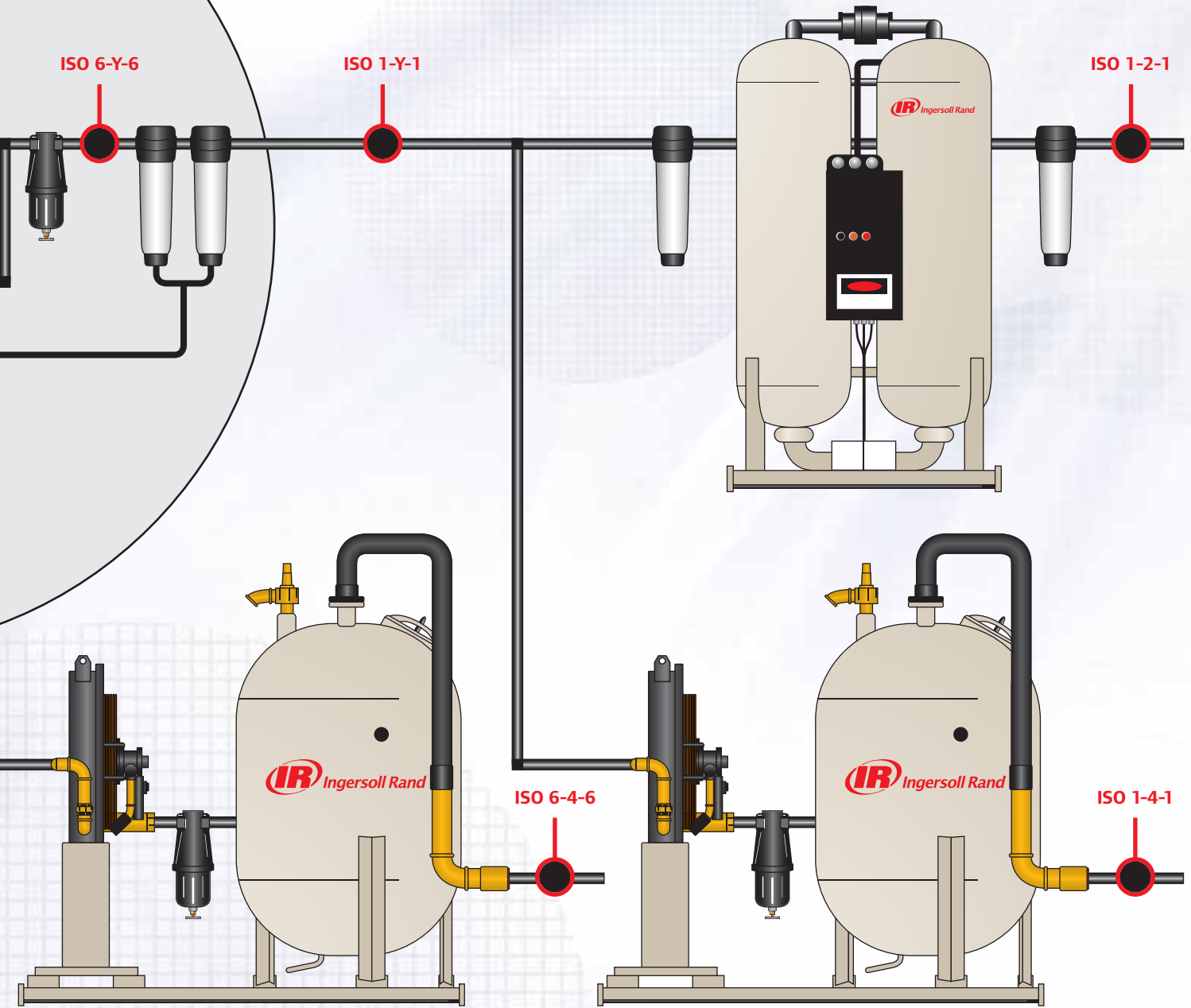
Air compressor with onboard filtration

The chart below shows what combination of Ingersoll Rand equipment will help you meet the required ISO class.

ISO CLASS	COMPRESSOR	AFTERCOOLER	DRYER
1-4-1	375 IQ	AD85	—
6-4-6	375	—	A85
6-Y-6	915	A165	—
1-4-1	915 IQ	—	AD165
1-2-1	1600 IQ	—	RD1600
6-4-6	1600	—	AD165

Y = 20° F over ambient air temperature

**Regenerative dryer
(RD Series -40° F)**



**Desiccant dryer
(AD Series +40° F)**

**Desiccant dryer
(AD Series +40° F)**

The Ingersoll Rand product lineup for clean, dry air

The IQ System™

Imagine a complete instrument air system that provides clean, dry, portable compressed air with no condensate waste. That's a perfect description of our IQ System™ compressors.

IQ System compressors provide instrument-quality air without the addition of bulky, skid-mounted filter / dryer packages. These self-contained, portable compressors range in size from 300 to 1,300 cfm and offer up to 150 psi — along with features not found in more expensive oil-free compressors.

These compressors feature a lockable valve system that lets you switch instantly from instrument-quality air to standard rotary screw air. In addition, they can be used for abrasive blasting and painting one day and provide clean, drier air the next.

IQ System features

- Rated for continuous-duty operation
- Condensate flash system vaporizes all condensate for zero discharge
- Integral aftercooler discharges air at only 20° F above ambient
- Simple, lockable valving allows versatility of running the unit in instrument-quality or standard rotary screw modes
- Redundant circuit safety shutdown system with pressure differential switches assures the proper air filtrations and indicate need for routine filter maintenance
- Particulate size < 0.01 micron; oil / water aerosol < 0.01 ppm

A clean step above the rotary screw

IQ System compressors solve both the air quality and waste removal problems typical of standard rotary screw compressors. All of our IQ System units feature an onboard aftercooler with 20° F approach, a coalescing dual filtration system, and an exclusive, zero-discharge condensate removal system.

Our dual filter system includes built-in monitoring and safety shutdown features to assure a consistent, reliable source of high-quality air. An early warning indicator informs the operator when filters need maintenance, while a pressure differential feature senses buildup in the filters and will shut down the unit to prevent harmful levels of oil carryover.

Our patented condensate removal system injects the oil / water condensate waste into the super-hot engine exhaust, where it is flash-evaporated. This eliminates any concern about collecting, treating, and disposing of condensate waste. So whether you're producing instrument-quality air or air for general purposes, this feature will save you time and money.

Please note: A pressure drop of 4 to 8 psi is common depending on flow, operating pressure, and ambient conditions.





Reducing water, reducing damage

Using an aftercooler and water separator can remove significant amounts of water from the air. Generally speaking, every 20° drop in temperature condenses one half the water vapor in saturated air. The compressed air leaving the aftercooler and water separator, however, is still at 100% relative humidity.

All Ingersoll Rand designs use highly efficient aftercoolers that provide an approach temperature (or CTD) of 20° F. When the air leaving the unit is only 20° F higher than the ambient temperature, you can remove significant amounts of moisture without using a dryer.



The Ingersoll Rand AF-1600 combines an aftercooler, water separator, and two large high-efficiency coalescing filters to offer cooler, drier, cleaner air. This unit comes on a heavy-duty skid base and features forklift slots or lifting bail capability for easy moving.

Removing moisture

A dryer helps maintain a constant relative humidity, ensuring reliable, consistent performance in your air system.

Ingersoll Rand offers a wide range of products designed to remove particulates, oil, water, and everything else that can damage your system. With these compressors, your tools will operate more efficiently, your maintenance costs will decrease, and you'll experience less downtime.

The right dryers for drier air

Ingersoll Rand offers the RD Series of desiccant dryers and AD Series of deliquescent dryers to provide the dry air you need.

RD Series design features

- Mounted coalescing / particulate prefilter removes liquid moisture and oil down to 0.001 ppmw and particulate down to 0.01 ppmw
- Fully automatic control and fail-safe system provides uninterrupted performance and safety
- Adjustable purge rate can be selected for varying seasonal and process requirements
- Construction-grade packaging with fork pockets and lifting eyes enables easy handling
- Mounted particulate after-filter removes desiccant dust from drying process
- Particulate filter removes particulates as small as 1 micron with 99.99% efficiency



AD Series design features

- Aftercooler provides 20° F approach temperature and utilizes air-driven motor that consumes 55 to 130 cfm
- Dryer vessels feature internal epoxy coating for long life
- Heavy-duty skid construction with forklift channels and lifting eyes provide mobility
- Steps and platform make it easy to load deliquescent material
- Safety relief valve provides over-pressure protection for system and personnel
- Two sight-glasses allow easy inspection of deliquescent levels
- Moisture Magnet™ II is a long-lasting, premium drying tablet ideal for single-tower dryers (sold separately)
- Dew point suppression 20° F below ambient conditions provides extra drying capability



ROTARY SCREW COMPRESSORS	HP375WIR	HP750WCU	HP915WCU	HP1600WCU
Free Air Delivery – cfm (m ³ /min)	375 (10.6)	750 (21.2)	915 (25.9)	1,600 (45.3)
Rated Operating Pressure – psig (bar)	125 (8.6)	150 (10.3)	150 (10.3)	150 (10.3)
Pressure Range – psig (bar)	80 – 150 (5.5 – 10.3)	80 – 175 (5.5 – 12.1)	80 – 175 (5.5 – 12.1)	80 – 175 (5.5 – 12.1)
Air Discharge Outlet Size NPT – in (mm)	1-1/4" (31.8)	2" (50.8)	2" (50.8)	3" (76.2)
Air Discharge Outlet Quantity	1	1	1	1 (2 with IQ System unit)

ENGINE				
Make	Ingersoll Rand	Cummins	Cummins	Cummins
Model	4IRD5AE	QSC8.3	QSL-9	QSL15
Number Of Cylinders	4	6	6	6
Displacement – cu in (L)	276 (4.5)	506 (8.3)	543 (8.9)	915 (15)
Rated Speed – rpm	2,400	2,000	1,800	1,800
Idle Speed – rpm	1,500	1,200	1,200	1,200
Bhp @ Rated Speed – bhp (kW)	125 (94)	280 (209)	300 (220)	560 (418)
Electrical – volts	24	24	24	24

DIMENSIONS WITH RUNNING GEAR				
Length – in (mm)	158.5" (4026)	195.1" (4956)	166" (4210)	290" (7366)
Width – in (mm)	78.1" (1985)	87" (2210)	79" (2007)	90" (2286)
Height – in (mm); Add 5" (127 mm) for lift bail	68" (1726)	85.4" (2161)	91.2" (2316)	101" (2565)
Track Width – in (mm)	66.2" (1681)	76.8" (1951)	66.3" (1684)	71" (1803)
Shipping Weight — No Fuel – lb (kg)	4,173 (1892)	8,400 (3800)	9,370 (4259)	16,690 (7586)
Working Weight — With Fuel – lb (kg)	4,593 (2083)	9,250 (4200)	10,350 (4705)	18,300 (8319)

AFTERCOOLERS	A85	A165	A165 WITH SKID	AF1600IQ
Fan Drive	Air motor	Air motor	Air motor	Air motor
Speed – rpm	1,750	1,750	1,750	1,750
Consumption – scfm (m ³ /hr)	55 (94)	130 (221)	130 (221)	130 (221)
Fan Input Drive – psig (kg/cm ²)	60 (4.2)	60 (4.2)	60 (4.2)	60 (4.2)
Capacity – cfm	Up to 850	Up to 1,600	Up to 1,600	Up to 1,600
Max Ambient Temp – °F (°C)	125 (52)	125 (52)	125 (52)	125 (52)
Min Ambient Temp – °F (°C)	35 (2)	35 (2)	35 (2)	35 (2)
Aftercooler Approach – °F (°C)	20 (11)	20 (11)	20 (11)	20 (11)
Weight – lb (kg)	440 (199)	660 (299)	790 (358)	1,500 (680)
Length – in (mm)	50" (1270)	59" (1499)	62" (1575)	96" (2438)
Width – in (mm)	32" (813)	36-3/4" (934)	36-3/4" (934)	48" (1219)
Height – in (mm)	38" (965)	41-1/2" (1054)	44-3/4" (1137)	48" (1219)

DRYERS	AD85	AD165	D165	RD1600
AFTERCOOLER				
Fan Drive	Air motor	Air motor	—	—
Speed – rpm	1,750	1,750	—	—
Consumption – scfm (m ³ /hr)	55 (94)	130 (221)	—	25 (42.5)
Fan Input Drive – psig (kg/cm ²)	60 (4.2)	60 (4.2)	—	—

SYSTEM				
Max working pressure – psig (kg/cm ²)	200 (14.1)	200 (14.1)	200 (14.1)	150 (10.5)
Dew Point Suppression Temp – °F (°C)	20 (12.5)	20 (12.5)	20 (12.5)	-40 (-22.2)
Inlet / Outlet Connection	2" NPT	3" NPT	3" NPT	3" NPT / 3" ANSI
Max Capacity @ 90 psig – scfm (kg/cm ²)	525 (892)	1,050 (1784)	1,050 (1784)	1,141 (1939)
Max Capacity @ 100 psig – scfm (kg/cm ²)	600 (1019)	1,150 (1954)	1,150 (1954)	1,250 (2124)
Max Capacity @ 125 psig – scfm (kg/cm ²)	700 (1189)	1,400 (2379)	1,400 (2379)	1,522 (2586)
Max Capacity @ 150 psig – scfm (kg/cm ²)	850 (1444)	1,650 (2803)	1,650 (2803)	1,795 (3050)

DELIQUESCENT DRYER (SOLD SEPARATELY)				
Deliquescent Dryer Required	Moisture Magnet II	Moisture Magnet II	Moisture Magnet II	Alumina
Deliquescent Dryer Weight – lb (kg)	650 (295)	1,800 (816)	1,800 (816)	1,356 (615)
Approximate Use Per Year* – lb (kg)	494 (224)	953 (432)	953 (432)	350 (159)

DIMENSIONS				
Length – in (mm)	88" (2235)	110" (2794)	55" (1397)	50" (1270)
Width – in (mm)	52" (1321)	63" (1600)	63" (1600)	70" (1778)
Height – in (mm)	68" (1727)	97" (2464)	97" (2464)	97-1/2" (2476)
Shipping Weight — No Fuel – lb (kg)	1,425 (646)	3,200 (1455)	2,150 (977)	2,100 (953)
Working Weight — With Fuel – lb (kg)	2,075 (941)	5,000 (2273)	3,950 (1796)	3,456 (1568)

*Assumed 100 psi, 80° F inlet temperature, 40 hours per week, 50 weeks per year. Specifications are subject to change without notice so that improvements can be introduced as quickly as possible.

Global reach, local service

No matter where your facility is located, Ingersoll Rand is committed to serving you 24 hours a day, seven days a week. Our worldwide network of certified, factory-trained technicians and engineers are a phone call away — ready to support you with innovative and cost-effective service solutions that will keep you running at peak performance.

Aftermarket support

You can count on Ingersoll Rand for service and support, long after the sale. We offer a complete line of the aftermarket products you'll need, including compressor filters and lubricants, desiccants, and much more.





Experience the power of Ingersoll Rand construction equipment and industry-leading support and service. Whatever your job, Ingersoll Rand has the solution — from portable air compressors, light towers, and generators to light compaction equipment, concrete equipment, and compact, heavy, and hydraulic demolition attachments. Running a successful business takes more than powerful equipment. That's why Ingersoll Rand partners with an experienced global dealer network to stand beside you every step of the way.

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